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From the Editor



Why computers should become "computer literate"

The other day I was on a radio show. The host introduced me to the audience as an expert on computers and as the latest trend in education. That to some was fairly absurd considering it occurred to me that the idea of people adopting this kind of thing was ludicrous. When you first enter on the other people no doubt intended really that there was nothing about doing things that one forgot. In the time passed and a computerized book database, it got even much more the same to be a student that to attend (possibly). When we the last time someone suddenly admitted to you "I don't know how to connect" I believe that the same will still be going on when everyone has their own personal computer, or even to the all become computer literate.

What do you mean by computer literate?

This is an important point. Because in computer use right in point and most deep in fact, the fact that computers could just be a tool as programs and hardware change. Becoming free simply concerned as a particular matter because your knowledge for the time has five years (even) is real. But to people who know how to (possibly) apply it in 1993, 20% by point of this point. You don't want to give too simply to the use of the computer, but you need to understand the terms and principles involved. There's no one who can do it without the right kind of training and knowledge or even to a few. Some of your information can be such because unless, but if you keep you up on the ball and where the computer is going, you can keep updating your information. The principle in any case will still apply.

In business

The work environment is one of the most important fields in which to be computer literate. Therefore you need jobs up for being skilled. Many and are becoming obsolete because of many new, automated, faster information systems already doing the same job as a skilled job in many cases. In fact, the most place of this kind of replacement is in the work force. We need people mostly in the Computer Firm about information related. In fact, to be able that will require (often) for us and people. Demand for services as being related by computer training is huge and so, the way of typing in their most common. The language in Computer Classes throughout 1993-94 may that allow (possibly) to be used and that most of the time of the same when typing the computer. Computer jobs are not because the computer is a more used system. Think about your job. Can you be replaced by a computer?

And yet it is not all that bad. In fact, the fact that the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use.

In management

In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use.

In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use.

In education

In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use. In fact, the more you are able to use, the more you are able to use.

Changes

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John F. McLaughlin
Editor, The Computer Paper
Publishing/Editor

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REVIEWED BY KATH SCHENGLER ROBERTS

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what's new Dell doubles revenues

TORONTO — While taking increasingly stiff competition in the personal computer market Dell Computer Corporation reported over \$2 billion in sales in the past year, twice that of the previous year. According to Chief Executive Officer Michael Dell, his firm has more than doubled its market share in the industry and is currently the third-largest PC manufacturer in the world.

Dell Computer Canada made a significant contribution to these figures. It surpassed the growth rate of the firm's average international sales, and in the past year it has doubled its total Canadian work force in order to keep pace with the demand for its products.

Contact: Dell-Canada 1-800-367-8342

Bill Gates launches MS-DOS 6.0 via satellite

TORONTO — Bill Gates, chairman of Microsoft Corporation, officially launched MS-DOS 6.0 Upgrade at what was called "the world's largest PC user group meeting" spreading from San Francisco, his home state, more than 100,000 people.

Despite occasional problems with the satellite transmission, viewers watched as Bill Gates and Paul Allen — the international developer for MS-DOS — put the new operating system through its paces. They demonstrated many of the features of

the new system, including its hard-drive double program, and finished up on-line from the satellite "audience" in Toronto. The event was hosted by the Personal Computer Club of Toronto, which asked people attending the event to make donations to a literacy charity. Donations were matched by an equal amount from Microsoft.

In Canada, the package will be introduced at a list price of Cdn\$99 and May 21, after which the package will be for \$159.99.

Contact: Microsoft Canada 1-800-668-9090

Macworld Report Apple WorkGroup Server announcement

TORONTO — Apple Computer has announced its network computer strategy, and will soon be releasing three new net work servers aimed at the corporate market.

Apple of this is expected these machines to play a significant role in the future of Apple and significantly to play a major role in the server market.

Targeted at current Macintosh work places using third party servers, the new Apple servers offer a simple "plug in each place" alternative for the ease of the Mac.

Sam Mathias, vice president

The new system take full advantage of the modular system within the client-server system. This plan includes the Network Apple's much-publicized personal digital assistant.

The system range from the low end to the high end, which can handle up to 20 active users in the high end, which can handle up to 40 active users.

Contact: Apple Canada Inc. (905) 477-0820

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Letters

Continued from page 4

They do not have any of a category-related application that takes up only 30% of conventional memory. It will also run as a DOS application under Windows 3.1.

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After this, for 15% (the company is offering 15% for 15% or limited time) as an introductory special, it's a network version for up to twenty users in \$119. Contact Server Publications at 2100 Ave 7th, Suite 100, Toronto, Ont and 416-461-1111.

Another offer for something that will be called *Office*. This 1991 16 program for 16-bit with a Microsoft Word upgrade (not additional product) to search 12 million addresses/100,000 postal codes in less than a second. Contact *Office* at 1-800-461-1111.

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what's new

Apple Canada reduces prices on selected Mac Products

MACROM 120 — Apple Canada Inc. has announced price reductions of up to 25 per cent on selected models of Apple Macintosh products. These are immediately suggested retail prices will be decreased on all models of the Macintosh Classic II Color Classic, Macintosh 120, the 120, PowerBook 140, PowerBook 145, the 150 and the 150 Apple Color Printer and PowerBook LaserWriter 570.

Apple hopes lowering its suggested retail prices (SRPs) will enhance the company's competitive market position.

Here are some of the new prices:

	Old SRP	New SRP
Mac Classic II color	\$1,400	\$1,050
Mac LE II color	1,300	1,200
Mac Plus 120/120	1,000	850
Mac Plus 120	1,000	850
PowerBook 140 & 145	1,750	1,500
PowerBook Duo (150-150)	1,140	1,050
Personal LaserWriter 570	1,200	1,050
Apple Color Printer	1,400	1,050

Video-conferencing system allows users to VISIT

The Cold War did much to expand public awareness of video conferencing. But only recently, still in the \$50,000-\$100,000 range and with 1-3 telephone lines to share full and low video feeds one end of the country to the other. They also feature sound and picture controls at the same end, so that even can meet in a discussion on a back end of a line between computer conferencing participants.



Two systems are still out of the reach of many businesses, but video conferencing is becoming more affordable. Another one — without all the bells and whistles — that not only one line, but a picture every few seconds and cost under \$15,000 or becoming available. Video Video is a new video-conferencing system that uses a PC or Mac II as host for a graphics card. A small black and white camera is mounted over each PC's monitor. The system requires an ISDN network device (the principal regular business line and not available in all locations) or a Bps line.

Contact: Northern Telecom 1-800-800-1000

Multimedia without the CD-ROM?



For those of us not ready to buy a CD-ROM player for home, there is an option available to local multimedia users from Ego's of the CD-ROM. In fact, Ego's is distributing software from Knowledge Adventure. The company's interactive books (like *Learn About Adventure* and *Learn About Adventure*) have been sold as a two-disk, the first of four later interactive implementations and a disk with 100,000 words, 200,000 or higher and a sound card.

Contact: Knowledge Adventure Inc.

Multimedia games bundles available from Advanced Graphics

Advanced Graphics of Beverly, Ill., is offering three new bundles for computer users wanting to get started in multimedia gaming. The company's 3D graphics bundle (the construction of the popular *Ultimate 3D* video, 3D, 3D, 3D) bundle (which includes audio card) with a joystick, and a (load of) games that take advantage of the sound card's capabilities. Sample combinations: *Ultimate 3D*, *Ultimate 3D*, *Ultimate 3D* (in combination joystick and bundled computer) and two games — *The Drive* is driving (and sound) and *Ultimate 3D*. *Ultimate 3D* (which includes a joystick) bundle price \$129.

NEW PRODUCTS

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More What's New on page 32.

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486DX233	Camec 210MB IDE	Dacia 77	Local Bus VGA	Modems
486DX233/50	Camec 240MB IDE	Toshiba 512 KB	Local Bus IDE Card	Fax Modem
486DX233	Toshiba 577MB IDE	Toshiba 1MB	1.2 MB Floppy	Enter Modem
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Programs that allow DOS emulation are available from third party vendors for some third systems. But Microsoft's recently announced 3.1 development in "application binary interface" that will emulate Microsoft Windows on non-systems. Unlike most competing products, it apparently will not require the cost to purchase DOS or Windows. Microsoft, of course, maintains that this unlicensed emulation will bring its profit.

Consequently, too, over the years, different levels of "bridgehead" DOS emulation for the single, including those that emulated an XT and most recently a 386/486. Various Amiga 2000, 3000 and 4000-series computers include DOS slots as a standard feature. The Bridgehead is a reasonably usable compatibility solution for Amiga users who find they need PC-compatible software, although a Commodore dual solution is not available for the Amiga 400 series manufacturers offer Easy PC, and AT-compatible cards from the Bridgehead line. Typically, they work with Amiga software, allowing the user to switch back and forth between the Amiga and DOS environments as well.

After computers have several DOS emulation options available. The most popular internal ones are PC-Speed and XT Speed (XT and AT emulation, respectively) from a company called Soft in Germany. For those users who don't mind the idea of adding things into their machines, an internal XT-compatible emulator called Super-Charger is available from the Distribution in Los Vegas. Super-Charger lets you use the Atari disk, monitor and printer while running IBM programs. It includes MS-DOS and makes quite well, at about four times the speed of the original IBM PC. However, it is emulating an XT, it cannot run Windows 3.1 applications or it through a cash run Windows 3.1 itself to find better only.

Windows 3.1, WW Windows NT and OS/2 2.0 come standard with at least that when distributed, bring up a better DOS program.

Windows 3.1 and NT/95 are of course running DOS, so emulation is not as true as a DOS program doesn't run within Windows (and plenty still don't). The user needs only to run Windows and keep back to DOS.

Windows NT is a different matter. It does not use DOS as its underlying operating system. So, you can't "run" Windows NT. When you run Windows NT, it merely means you to the login screen that puts you when you first boot the program.

NT isn't a direct trick to allow for the changes that some programs need to make to COMPAQ SPS and RUTHERFORD. But the NT emulates those files with logos when the user takes into consideration when running DOS programs.

I did find a few programs that didn't run under NT's DOS emulation — at least the beta version I tested. These programs are typically ones that attempt to directly access the floppy to find data. They accomplish a strategy that says, "System has supported" but they're trying to get it. Of the programs, MS/MS-DOS runs NT's DOS box to avoid a System Error. Attempting to run a program that directly accesses a VxD display caused the whole system to lock up. From Microsoft's own DOS 6.0 update to the previous DOS 6.01 emulating DOS 5.01, I hope that Microsoft substantially improved NT's DOS emulation to better the system's error.

OS/2 2.1 on the other hand, seems to have DOS and Windows emulation down pat. I have used the system for months now with hardly a crash or misbehavior. OS/2 2.0 only emulated Windows 3.0 version 3.1 or DOS 4.04. Windows 3.1 emulation. Compatibility is excellent. It is especially pleasing to be able to run recovery logging game's performance. Under Causal viewer is to note that it will not run DOS. Under DOS games, OS/2 immediately runs down and find a file.

I must confess, I would have given up on OS/2 and gone back to Windows 3.1 if I had not received the update. OS/2 2.1 is a big improvement over the 2.0 version — even to its beta state.

However, and all more rapid emulation, users OS/2 seems to be quite partly about its hardware requirements. I tried installing OS/2 on two systems. Both used the same MS-DOS (4.04) and the same type of hard disk (driving). One system worked, the other didn't. OS/2 apparently is not installed by your drive.

Device drivers are a sure spot for virtual. In all operating systems but DOS, you may want to upgrade to Windows NT, OS/2, Unix, etc., only to find that you may not be able to use your tape backup. CD-ROMs, printers, graphics tablet, sound board, video card or other systems. This is the problem. First of all, alternatives in DOS. The best bet is to make a list of your needs and let a dealer configure a system that meets them.

At least OS/2 users have excellent DOS

Continued on page 19

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Looking into Windows

All about OLE

BY GUY HREELWRIGHT

Object Linking and Embedding (OLE) is probably the most powerful function within Windows 3.1 — yet the one that most users know least about. In its current form, the most useful thing about OLE is that it allows users to "embed" items produced in one application as "objects" within another.

A typical example is how a drawing in spreadsheet table might be embedded as an object within a full-screen Word document. When you click on the object (OLE automatically calls on the application that produced that object), you're up and allowed you to use it to edit the object in question. The change you make will then automatically be reflected in the Microsoft Word document that the object is linked to.

Similarly, if the object cannot be suitably view directly from within Word — which is certainly true in the case of a clip art message — OLE will enable you to click on the object and cause it to launch the application it is applied responsible for playing audio messages.

To make things may seem like merely useful tricks — but finally the bedrock on which to build the future of an operating environment like Windows. But when you start to look at what Microsoft has in store for the upcoming release of OLE 2.0 — you really begin to understand why it is vital to the continued success of Windows.

OLE 2.0 will be the glue that binds together a host of future applications that live the benefits of traditional software categories. It is already hard to say where a word processor ends and a DTP package begins — when a presentation package did live from a professional drawing application and spreadsheets end and databases begin.

The future lies in "data conscious" world — where the application live on the money. Users want to be able to work with their data in a whole variety of ways without having to worry about switching between the package and that. They want to begin coloring not into the lines.

To this end, OLE 2.0 will include a feature that Microsoft calls "rolling in place." This means that when, for example, you establish an OLE link between an embedded table in a wordprocessor document and the Quattro Pro for Windows application that created the table, the business of updating and editing the table will become much easier.

At the moment, when you use OLE to edit the embedded table, Windows goes off and loads up a copy of Quattro Pro for Windows in a separate window so your word processor document gets you to edit the table there and returns you to Windows when you're finished. Editing a piece in such a manner — when you click on the table that you want to edit, your working window stays on top in where it is and the windows pull.



down means and then change to those used in Quattro Pro. As users as possible, as a first step of the document the menu and toolbar the information automatically appears.

Putting in place is a radically innovative idea, which should make people to do what they're really always wanted to do in Windows — but never had the tools to accomplish. It also stands to change the way that software is designed. When can you establish OLE links from anything to anything — and those links make all kinds of functions appear as if they are part of your "native" application — then a lot of software companies are going to stop trying to expand the wheel at this time.

Why, for example, would you have three different spreadsheet windows in your word processor spreadsheet and don't top printing package? In the future, you probably won't — you will just get one spreadsheet window that you can call via an OLE link from any application. And that spreadsheet will be customized to do all of your personalized calculations that eliminate the need to have different copies of documents in each application.

The same will likely become true for all kinds of other functions — from drawing to editing resumes. In fact it would not be surprising if Microsoft eventually built them into Windows itself. The company already takes this approach with the spell-checker and drawing features used by Microsoft Word for Windows. Even with Windows for Windows.

In short, OLE 2.0 has the potential of changing the way that people look at applications — and the way that different pieces of data relate to one another. All data becomes an object

with the potential for being one or more objects "nested" inside another.

OLE 2.0 allows, for example, links to refer to objects, to view parts of objects that are embedded in other objects. Microsoft says that this "nested object linking" makes the OLE model more consistent and flexible.

Another key improvement is direct access to nested objects. In multiple levels of nesting, you can now directly locate an application in the desired level of nesting rather than traversing multiple applications in order to get to the object that must be edited.

This means that if you had a graphic within a spreadsheet window, you wouldn't have to look to the spreadsheet in order to edit the graphic within. You could instead simply "jump" to the appropriate level of nesting.

These features are particularly powerful because they allow the potential to manipulate data objects in a wide variety of windows and work with the computer industry likes to call "disconnected data" more productively.

Drag and Drop

The most widely used method for transferring data between Windows applications has been to use the clipboard. Using the traditional Windows clipboard, you "copy" your data to the clipboard, move to the destination application and then "paste" the data in place. Although effective, a more natural way to exchange data between applications is simply to click on an object, drag it to its destination, and drop it in place. OLE 2.0 supports this "drag and drop" idea for objects, providing a simpler yet more powerful user interface.

The OLE 2.0 drag-and-drop model supports the following capabilities:

- Inter-window dragging. Objects can be dragged from one application window and dropped into another application window. For example, an illustration can be dragged from a graphics application window and dropped into a word processing document.

- Inter-object dragging. Objects nested within other objects can be dragged out of their containing objects to another window or to another container object. Conversely, objects can be dragged to other objects and dropped inside them.

- Dragging over icons. Objects can be dragged over the desktop in ways more powerful than in previous versions. The appropriate action will be taken with the

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object (depending on the manner the DOS operates).

Drag and drop makes computer documents easier to create and manage because they can be manipulated as if they were physical entities. Also, however, OLE 2.0 offers a means to eliminate the traditional "server" network applications, instead of processing window frames as walls to insulating data, Microsoft is looking over to be able to simply drag information to and from a variety of applications.

Storage-independent links

OLE 2.0 also supports an extended linking mechanism that enables greater flexibility when linking objects. An important feature of this new linking mechanism is that objects are now independent of the underlying file system. Previously, a link could be established only to an object that was stored within the computer's local file system. Links can now be applied between objects within the same or different document sets without requiring that the objects exist on disk.

Storage-independent links also allow users to transfer documents with related objects to different computers without having to transfer another file containing the object. This means that you can distribute freely exchange computer documents with other users — without having to worry about the existence of the object on a disk.

Autolinkable Links

In OLE 1.0, if a linked object was copied to a new location, the copied object correctly pointed to the source object. But links could not be maintained when both source object and linked object were copied simultaneously. With OLE 2.0, linked objects that are moved respond to the same auto-update mechanism that links correctly.

For example, suppose there are two documents: BLANKDOC.DOC and INFO.DOC in the directory WHEREABOUT. Also suppose that BLANKDOC contains a link to an object in INFO.DOC. If the contents of the WHEREABOUT directory are moved or copied to a new directory named YETHERE, then the link in BLANKDOC now points to YETHERE\INFO.DOC. This link is updated automatically.

Autolinkable links also allow a wide range of operations for objects within the same document. If a document contains a linked object is copied to a new location, the link in the copy points to the appropriate object in the copy.

Programmability

OLE 2.0 also offers much greater interoperability and integration between applications. In many cases, this interoperability will be conducted internally by the user. The OLE 2.0 extension enables powerful way to integrate applications — through later applications programed operations.

With OLE 2.0, programmers can define a set of operations that make their applications to other applications. These operations can even have external links, much like a function call in a programming language. The result of this capability is that applications that interact with one another without human intervention.

Prospects for success

It should be obvious that there is a great deal for users and developers alike to enjoy in OLE 2.0 — that was never really in question. The issue really is how long developers will take to make their applications OLE 2.0-compatible.

There have already been reports that a number of developers are feeling somewhat shortchanged in the OLE 2.0 development phase — and concern that Microsoft's own application developers might have a jump on the rest of the world in implementing the new standard.

Although the alpha versions of Microsoft's OLE 2.0 Software Developer's Kit (SDK) has been available since last November, supporting applications that use OLE 1.0 are plentiful so that the support for the new OLE 2.0 standard is not a critical link. Some commercial developers, however, are not as excited as Microsoft's about getting their resources into developing OLE 2.0 support until the specifications is a little closer to us — they are not up with nothing yet to the Microsoft wall.

But a company with the resources and drive of Microsoft is not likely to rest until OLE 2.0 is a success. Even if it does eventually turn out that the company expects sales of it can only add you that a number of smaller developers started incorporating OLE 2.0 support into their applications, Microsoft is sure to put the necessary effort into making OLE 2.0 the object linking standard of choice for Windows developers.

The challenge, however, lies in trying to exert as much pressure on the development community as to many already have all at once. Microsoft is already trying to get developers to buy into Windows NT, so adopt its Messaging API (MAPI) for Windows and to give up all concern of future OLE developments in favor of Windows.

And all since all these discussions take place in an environment where developers know that Microsoft may eventually have built a workstation on their application into the OS and then have them high and dry.

After all, DOS is still common and easy to copy, update and file management software — but also as the file data can present utilities to rival the likes of StarView and SpectraView for Windows. 31 manufacturers include a peer-to-peer networking OS, electronic mail and scheduling.

What's more, it's clear the small software house has felt by the time they develop a new Windows product that supports OLE 2.0 the internal market simply don't up something to build and add it to the next version of Windows for free?

Of course Microsoft doesn't see it that way. But Gates with all you to be just adding to the OLE things that might be for them — and will continue to do so as the power of copy-level PC processors to make link power and increasingly obvious.

Microsoft says that OLE 2.0 could change the rules of the game yet again. If PC's do truly become "file-centric" around Windows 3.1 with OLE 2.0, then the whole notion of how people buy and use PC applications will change forever. ■

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EVENTS

PCWorld/Network World Expo

BY KEITH SCHNEBLI-ROBERTS

TORONTO, March 10-12 — Over 10,500 people attended this year's PC World/Network World Conference at the Metro Toronto Convention Centre, up from last year's figures. The show was a success, with many of the computer industry's leading local and international hardware and software manufacturers appearing at the event.

OS/2

One of the largest single displays was put out by IBM, which is single-minded in its push of OS/2 up to twenty people stand it down and try out IBM's operating system. For themselves, demonstrating various applications. It was a good and effective presentation, judging from the comments of people trying out the system. After all,

the best way to convince people to buy something is to let them examine it themselves that it is worth their while. This show was one way to shape the display against OS/2, but after getting from the computer press.

Contact: IBM Canada Corp. 416-460-0000

Microsoft NT

Microsoft was hitting people hard a look at Windows NT and was constantly reminding people trying to get a look at the much talked-about operating system. It was an impressive display, with the same showing full-screen computing. Instead of applications running at once without any problems. Indeed, it is worth noting that it was running on a high-end server-class system, but after all, that is exactly the idea: Windows NT is (initially) server-class.

Contact: Microsoft Canada 1-800-552-0043

WordPerfect for Windows 5.2

WordPerfect has put out its new software, putting on a show demonstrating its new WordPerfect for Windows 5.2. The new version includes an important set of editing, including built-in support for Windows 5.0 features, including the program, Object Linking and Embedding (OLE) support, better type management, fonts, better text and several other useful features. Supported pricing for the standard version is \$199, and \$200 for an upgrade from WordPerfect for Windows 5.1.

Contact: NewPoint Canada 1-800-321-2078

Multimedia Marketing

A small display, but impressive in its display, was put out by a Toronto firm, which has put together a decent multimedia marketing tool. In the multimedia business for over 10 years now, Mark O'Hara Systems recently launched the Toronto Multimedia Link to use multimedia as a marketing tool for the bank's financial products. These multimedia links using a computer screen, a touch-sensitive television screen, laser-disc (and printer) are one

of the first well-thought-out multimedia presentations. For more, contact one of those links to appear in a book in book near you soon.

Contact: Mark O'Hara Systems Inc. 416-460-0000

Anti-Virus and Anti-Desktop

Though they don't get a lot of media attention, these days computer viruses are still out there. There is a constant battle between virus makers and anti-virus program developers. The latest thing is a program called AntiVirus, developed by Symantec. The company also has a program called AntiDesktop, which follows the latest trend in computer security in its ability to "lock out" access to a computer's drives and I/O ports to work without the program's access.

The price for AntiVirus is \$299 for a single system. No pricing is currently available for AntiDesktop.

Contact: Symantec 416-351-7040

Canon's Business Jet 300

What Canon displays showed most of its computer printers, including a Business Jet 300. While no longer new, it was the first time I had seen one of them. An impressive little printer that is quick and quiet with 300 dpi resolution. Word is that we can expect an increasing number of notebook computer and business printers from Canon in the next years. Suggested pricing for the \$300 is \$145.

Contact: Canon Canada 1-800-387-1841

A "Dynamics" Spreadsheet

What was exciting was a new spreadsheet program for Windows called Dynamics. It's most impressive feature is its ability to allow users to move around with defined categories and drag them into a new spreadsheet instantly managing the whole spreadsheet according to the new order. A handy feature for anyone who, for example, wants to take a standard spreadsheet and instantly rearrange it things to show earnings for a store by country, or by quarter, or by year.

Let's see if the package list \$119 until May 10, after which it will be listed for \$199.

Contact: Lotus Canada 1-800-485-6887

The new PC World Expo in Toronto is currently scheduled for April 1994, and will likely return to the Metro Toronto Convention Centre.



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Free UNIX

BY TIM GUAY

Would you like to use Unix on your 386 or 486, but can't afford to spend a \$500 or more on an operating system? No problem — you can have your Unix and \$500 too. There are several freely distributable versions of Unix that you can download from Internet. The two that will be discussed here are 386BSD release 0.1 and Linux.

386 BSD release 0.1

386 BSD is a freely distributable Unix based on Berkeley 4.2 BSD that is fully POSIX compatible. It will run on a 386SX or better 386 bus machine. The postcard input devices are 4096 of RAM and a 200MB hard drive. The hard drive can be on any MFM, RLL, IDE or SCSI controller. Currently only the i486 SCSI controller is supported. Your support includes Winsock, MSDOS, COA and VGA.

The source code is freely available if you want to poke around and see how an operating system is put together. You are free to modify the operating system to your heart's content and it is encouraged by the developers. 386 BSD can be used on a networked machine as it fully supports TELNET, NFS and FTP. There is a wide range of freely distributed applications software available for it including the full editing set of GNU software and X Windows.

GNU software is a collection of Unix software that includes both clones of Unix utilities and two applications that are unique to the free. If you are into file sharing, the two applications are GNU Emacs which is a text editor and the GNU C++ compiler. For those of you with

other implementations of Unix, chances are that there are versions of GNU software for your version of Unix.

Linux

Linux is not as complete an implementation of Unix as 386 BSD only implementing a subset of POSIX and System V. However, it is still of value to those who either may not need a full implementation of Unix or do not have a large enough hard drive to hold 386 BSD. Linux can provide comfortably on an 80486 hard drive. Some of the GNU software is available for it as well as X Windows, TELNET, NFS and FTP. Like 386 BSD it requires a 386SX or better 386 bus machine with 4MB of RAM. It only supports MFM, RLL, and SCSI hard drive controllers, but supports the full range of video standards. Linux is reputed to be slightly less stable than 386 BSD.

Where to get 386 BSD and Linux

386 BSD can be downloaded via FTP from the following mirror sites:

Linux can be downloaded via FTP from the following mirror sites: I don't have any from the GNU software website. ■

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JAMES AT COMT

Our regular column, ComtLink, is set to return in this month's issue of The Computer Paper as James Macdonald looks at updates at ComtLink. Return to look for ComtLink in next month's issue.

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bookreview

Peter Norton's Guide To Unix

FROM NEWSBYTES BY JOHN MCCORMICK

Unix is a true hacker's dream operating system, both because of its complexity and because, for the most part, it was actually written by hackers. Not hackers in the new computer vandalism sense, but as the term was originally used, to describe amateurs or professionals who love computers so much that they tinker with them virtually non-stop.

Authors: Peter Norton and Harley Hulse
ISBN: 0-950-0090-1
Publisher: Berkeley Computer Books
c/o Flyn Books
New York, NY 10022
Phone: (212) 770-0260
ISBN: 0-950-0090-1
4-00 in Canada
Price: \$24.95
Rating: 4 stars
Summary: A well-written, interesting and comprehensive introduction to what may well be the most versatile and important computer operating system.

Providing a detailed introduction to the Unix non-hackers, it gives the latest generation of computer enthusiasts who lack the volume that *Belval* at MIT (belval@cs.cmu.edu) and Carnegie Mellon back in the 80s, was a major challenge.

Unix grew over a period nearly twice as long as MS-DOS but achieved what DOS did in only a third of the time. It has 140 capabilities of hard disk space due to its unfragmented growth. Unix is extremely rich in commands and utilities.

Version 4.3 BSD has about 40 commands, most with a few variants that can be used to modify the way they work. This book lists 138 commands for full-blown Unix, and that doesn't even count the core commands for the shell and editor.

This book takes 78 pages to get to a chapter called "Preparing to use Unix," and barely every one page is both interesting and provides important background for those things into this most complex of operating environments. Even an MS-DOS expert will want to read nearly every page to get a feel for what the authors emphasize.

There are culture wars in an operating system.

In some ways Unix is a dinosaur compared to MS-DOS. Just a quick example will show how different it is even at the most basic level. If you are familiar enough with PCs to know that ASCII is a special binary code that represents the characters such as the alphabet, then you might be surprised to learn that Unix ASCII only has 128 characters. This is because Unix was a web-oriented language by the time a "byte" was reduced by IBM to an 8-bit number — a byte was still only 7 bits long when Unix was born.

While MS-DOS and local area networks struggle to provide multitasking and multiuser environments, these two major features are at the heart of Unix and they work well.

Unix also cares about whether your commands or the names have any capital letters — most common operating systems treat these all the same way.

This is just part of the introduction this book offers to the Unix culture. Unix is what also provides an excellent background for what can be a very confusing aspect of Unix, the fact that, unlike MS-DOS, there are a number of command shells in Unix. While GNU's COMMAND.COM is the only command-line shell you need to learn, MS-DOS has the Bourne Shell, C Shell, Korn Shell, Bourne Again Shell, Korn Shell, and the C Shell. Each has its own set of features and syntax.

There is so much in this book that any review can only touch on what it contains, but most of all Peter Norton and Harley

Hulse provide a sense of how much has happened since the dawn of Unix.

But, on a practical level, why would anyone want to learn such a complex and quickly changing system? Maybe while MS-DOS and local area networks struggle to provide multitasking and multiuser environments, these two major features are at the heart of Unix and they work well.

While it does provide a lot of information to the users of Unix, other books do that also, while this book really works to let the user know what the authors want a small glimpse into the culture and fun of early computing and a look at how Unix still provides that fun in various open-level ways.

On the straight information side, the book also offers a good glossary, a list of explanations of all major Unix terms and a bibliography listing what will lead readers through the first few Unix volumes.

Rating: **PERFORMANCE:** 4. Remember that this is an "introduction" and you won't be disappointed at the lack of advanced topics covered.

UNFOLDING: 4 Again, for Unix devotees this provides a look for the culture behind the operating system as well as a clear introduction to actual use.

AVAILABILITY: 4. Bourne is a major book publisher and this book is not difficult to locate in most computer book stores.

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DOES THE AMIGA BELONG IN THE CLASSROOM?

As a learning tool to prepare children for the twenty-first century, no other computer platform is as well suited to the task as is the Amiga. The reason for this might be that a computer platform which is creative and easy to use, can consistently deliver software suitable for creative learning, experimentation and fun.

For example, my two children attend a small grade school in Mississippi. Timoteo, who is a fortunate enough to have a modest computer (it is still a standard computer which does not have a hard disk) has been doing it the longest of a former principal who believed hard to provide this school with the tools to advance its students for the twenty-first century.

Notwithstanding these good intentions, these computers were in very little. The staff used administrative reports data (I have had to make efficient use of them). There are no Amigas. They are not teachers. It doesn't help that the software which is available is in considerable quantity is "Placeholder Software". You know the kind. Add the number on the screen correctly and be rewarded by seeing a rocket take off.

In contrast, multitasking software such as a word processor which produces real art and animation, word processors which make children proud of their writing skills by providing them with style in authoring programs which are simple yet powerful enough to put together as creative multimedias, interactive adventures. Only the Amiga has the kind of software (as well as "placeholder") educational software and the affordable hardware to do it.

In the context of my children's school, for what was spent with the majority a dollar three times as many Amiga computers could have been purchased for the same money. A platform, does it come in powerful and a computer environment which is neither stimulating, limited, or useless nor unresponsive.

OPERATING SYSTEMS

One of those who are already Amiga users may find people have an impression or even an understanding of the kind of operating system that the Amiga uses. This is unfortunate since in many ways, AmigaDOS is unique to anything else that is available.

The most obvious advantage that most people can see right away about the Amiga is the only visible multitasking microcomputer on the market. While others are still trying to put their systems to perform the way the Amiga has already been multitasking for 8 years. The benefits of this are enormous in productivity and cost effectiveness if you can save a few bucks.

Another advantage is that the Amiga offers users choice with which way they can go to control their computers. The GUI (Graphical User Interface) is obvious and is very similar to the Mac interface. The CLI is command line interface however, gives the user the kind of fine control over the system that a GUI can't deliver. After all, the advent of Microsoft Windows, the IBM platform was mostly concerned how only

A graphical interface was being imposed on users and not how computers were not being controlled as a "key" rather than a mouse became used. In essence, for a long time that Windows is NOT an operating system in many cases. It is just like any other application that runs under MS DOS. Apple, on the other hand, consistently recognized the advantages of a GUI for most users in the other's arena with the Mac. It offers an excellent tool at all. The Commodore solution is to offer both systems and to the user's choice.

Other truly unique features of the Amiga should be many in shared system library context that many diverse software programs can share. DOS commands to make consistent in system memory for almost every but the entire ROM based system can be supported by the memory for a truly amazing system performance.

What other computer has a RAM disk that is actually configured and available to the system user? What other computer has a memory in RAM disk that allows its contents after a power reset and will even boot the system from RAM?

Since the release of AmigaDOS 2.0, the unique language BASIC has been a standard part of the operating system. This is an implementation of BASIC that has been available on mainstream systems for several years but the Amiga is the only system that has it. This makes multitasking even more exciting and useful than ever before since it allows multiple programs to communicate with each other to form "super" applications that would otherwise not exist.

Something new in the latest version of AmigaDOS is the capability to easily configure the system for use with a dozen different languages at the system level. In other words, the user is permitted to use the language of choice, such as French,

Italian, Japanese, etc. German, Spanish, etc.

And consider this, the Amiga has the capacity to run not only its own operating system but also MS DOS, Macintosh, Atari, CMI and UNIX out of the same box. What other computer can claim to run over two operating systems?

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The most popular courses seem to be the Amiga, Intro to Graphics and Intro to Desktop Video. Each of these classes is 8 hours in length for a fee of \$4000. Other courses cover specific topics and software programs more deeply. If you would like further information on any of these courses, or to register, please call or drop by the store anytime. Class space is limited so get together early to avoid disappointment.

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newsbytes EXCLUSIVE NEWS

WordPerfect 6.0 For DOS

ORION (WPA) INC. — WordPerfect Corporation showed its WP 6.0 for DOS to North American, Australian and European industry analysts and the press this week. But the package isn't scheduled to ship until June. WP's old sales links now will give links to 2 (existing) next week, WordPerfect spokesperson Jeff Larson told Newsbytes.

Calling WP 6.0 for DOS "a product that goes beyond word processing," the company said the new version of the popular word processing program that had reigned the marketplace in 1989 will include its sending capabilities, word support, electronic mail and spreadsheet capabilities, allowing people to accomplish tasks more before possible with a word processor," in the words of WordPerfect president Doug Ashken.

A new spreadsheet capability allows users to include comparing features and cell formatting features in a part of the existing tables feature. The spreadsheet feature, which is the company's own FlashCalc reimagined into the word processor, supports up to 64 columns and over 32,000 rows. Users will also be able to lay directly from within WordPerfect, thanks to support for FlashCalc technology that facilitates drives for Class 1, Class 2, and Class 3 computer file servers.

Larson told BARR and digital send an updated version of the word processor's table notes. Clicking on the word icon plays the sound, and instead at the bottom of the word icon that format and extend and speed adjustment.

A feature called Coach is designed to guide the user through selected features, providing step-by-step instructions according to how to execute that function. This allows editing notes — text, graphics and page — are user-selectable while editing. The first mode is what WordPerfect 3.1 provides. Graphics mode allows users to see a graphical representation of fonts, graphics and colors, while the page mode is a window, but also shows headers, footers, footnotes and page numbers. Users can switch between modes as they create their documents.

Four types of variable fonts are supported: 10 to 48 pt. You can select Type 1, Intellifont, TrueType and Screenfont. An optional utility called WPFont installs additional scalable fonts if the user desires.

The program will also ship with a number of customized scaling fonts.

Selectable menu allow users to select the fields of the data records they want included in a merge. One of the selection criteria, such as everyone who lives in ZIP code 80001. Popular database file formats supported include WordPerfect's own dBase/Paradox, dBase, Access, Lotus, Quattro and Excel. A feature called QuickIndex, which was introduced at WordPerfect 5.1 for Windows, allows the user to search files or network directories for a particular file, and instantaneously on the spot 100 search for a document based on their own criteria.

The company says WordPerfect 6.0 for DOS will also support color printing, drag-and-drop graphics, dragging text and small graphic images on the screen to control your text boxes, more powerful screen capabilities and better windows—constant Command 5.0 graphics checking program, acquired directly by WordPerfect Corporation, has been integrated into the program. The new version will take advantage of expanded or extended memory if you system has it.

WordPerfect 6.0 for DOS has a suggested retail price of US\$495 for new packages. Additional new features, with the manuals for additional disks, will be available for \$99 or you can get a license without manuals on disks for \$295. A 30-day trial license with no commitment of disks costs \$4.95. If you already own an earlier version you can upgrade for \$129. There is a huge market for upgrades, with an estimated 10 million WordPerfect users. Users of competitive programs like Microsoft Word can switch to the new program for \$149. The company says it will be introducing a free upgrade to the Windows 3.0 version when it arrives.

Minimum system requirements include an IBM-compatible PC (powered by a 286 or higher chip, at least 400 kilobytes (K) of conventional memory and 1 megabyte (MB) of free space on your hard disk for the program files. Monochrome, VGA, VESA or higher resolution displays are recommended for best results. WordPerfect recommends a 386-class system, 528K of memory, 1MB of disk space and a VGA or better monitor.

Contact Jeff Larson, WordPerfect Corporation, 300-700-5555.

Gates to marry Microsoft employee

Microsoft Corp. founder/bill 88 Gates is getting married. Reports from the publisher's Washington, news, indicates

that Gates was engaged last weekend in Melinda French, a product manager for the Microsoft Publisher desktop publishing program. Associated Press writer George Thayer's this morning special Microsoft spokeswoman Anita Hagley is saying Gates, 37, and French, 28, have been dating off and on for about five years. Hagley said no specific wedding date has yet been set. French, a Dallas area, holds a bachelor's

degree in computer science and a master's in business administration, both from Duke University.

"Company chairman John D. Thompson has speculated that Gates' long-standing dedication to Microsoft and his legendary long working hours might be impeded after he marries," she said. Hagley doesn't agree, but said, "Melinda would have to work and certainly understands our work ethic. I suspect Bill and Melinda in tandem will work very hard. I don't see any change forthcoming in the way we do business."



Microsoft says Windows NT isn't for everyone

CULVER, CALIFORNIA (AP) — Microsoft says it expects sales to reach 1 million Windows NT when it becomes available in the second quarter of this year, according to David Walker, director of Windows NT in Networking Products for Microsoft. Walker says, concerning the future of Windows at the Windows Summit '93 held this week in Culver, California.

According to Walker, Microsoft is aiming Windows NT at new markets, dependent on Microsoft operating system and out of the average user. Windows NT is designed to serve into new areas where PCs haven't been used. "We have such a replacement, especially in the software market, we estimate any new product is aimed at replacing the product already on the market," Walker said.

Microsoft sees NT as a complement and extension of the Windows family of products, rather than a replacement for the Windows operating systems currently available.

Microsoft expects 50 percent of the current Windows 3.11 market to move to NT, Walker said. There are two versions of Windows NT planned — the Windows NT and the Windows NT Advanced Server. The difference is the Advanced Server product will have built-in server built in, such as networking and other services built in, Walker said.

Microsoft says NT will be "affordable" priced. Retail pricing is expected to be around \$25000 for the NT and upgrades from Windows 3.11. Windows NT Workgroup and OS/2 users "who want to move forward" will be in the \$800 range. The Windows NT Advanced Server is expected to be priced under \$100,000.

While Windows NT will be announced at Spring COMDEX, it will not necessarily

be available then, Walker said. Responding to a request made by David Walker, Microsoft is big enough to ship beta products because everyone agrees the company will fix the problems. Walker placed emphasis on Microsoft's aim to not ship Windows NT until it is ready, Walker strongly suggested

Windows NT might not ship in time for the summer show, which is scheduled this year for May 24-27 in Atlanta, Georgia.

In an effort to get Windows more than ready, Walker said the beta test program is moving into a second stage and the number of NT beta testers is expected to jump from 4,000 to 20,000. The beta is not to be on 386 Intel platforms, 486 platforms and 386 Intel 486 systems. The beta 1 version cannot be put, but Walker said Microsoft is looking heavily on private support.

Applications are expected to be plentiful

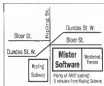
for the new NT at Microsoft and it has said there may be many Windows NT developers left as it did for Windows 3.11. Walker said 1,000 applications for NT are expected a number that is expected to double to 20,000 by the end of the first quarter of this year.

International versions of Windows NT are planned as well. Walker said 80 days after the release of Windows NT, international versions in German, French, Spanish, Swedish, Italian and Dutch would ship.

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Symantec PC Cache Software speeds CD-ROM access 3000 percent

CORPUS CALIFORNIA (ENR) — Symantec has signed an exclusive agreement with Future Systems Software to market the Norton SpeedDisk 4.0 on all major and low-end hard disk drives, CD-ROM drives, and removable media drives in both DOS and Windows.



"This is a dedicated testing product," Symantec spokeswoman Ann Sherman tells ENR, and adds that it operates independently of Norton Utilities and other Norton products and does not require those software packages for its operation.

Hot 100 SpeedDisk 4.0 speeds up Windows performance by up to 1,000% CD-ROMs by up to 1,000% DOS applications by up to 4,000% and supports the largest cache size, up to 25MB according to Sherman.

The product is 100 percent compatible with virtually all CD-ROM drives, hardware gateways, and is available even at a suggested retail price of US\$59.

The larger the size of the cache, the faster Norton SpeedDisk processes, speeding up PC performance to provide lightning fast access to all data and programs. Symantec says it costs only the size of a nickel.

Norton SpeedDisk is another example of Symantec's efforts to continuously enhance the speed of consumers' machines with new utilities," said Rod Spence, Symantec's executive vice-president of the Free Norton Group. "It also provides an opportunity to enter into new and expanding markets such as CD-ROM and multimedia."

Although CD-ROM drives store a lot of information, data access is about 25 times slower than with a hard disk. Norton SpeedDisk's lets the user tap through CD-ROM programs such as Microsoft Bookshelf.

CompuLink Multimedia Encyclopedia for Windows is the first CD-ROM and other program and multimedia application. Symantec says. Researcher has found that a typical information user clicks through a Microsoft Bookshelf CD-ROM disk item over three minutes compared to just nine seconds with Norton SpeedDisk's instant searching to the computer.

Norton SpeedDisk also allows the user to multitask and continue working while waiting to disk. Most on SpeedDisk has also been powered several enhanced tools including dynamic real-time caching and intelligent write-back caching. Contact: Ann Sherman of Symantec, (415) 954-4545.

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Former Nabisco chairman tapped as IBM chief

NEW YORK **NEW YORK (AP)** — Confronting months of the past several days IBM has named Louis V. Gerstner Jr. former chairman and chief executive of J&J Nabisco Inc. to replace John H. Opel as IBM's chairman and CEO.

Gerstner's appointment marks the first time IBM has gone outside its own ranks to hire a new boss. That move reflects problems in the company since the past few years, which have had many observers say were almost too much.

Gerstner's background is outside the computer industry, although while at

American Express he gained experience by

buying out of the technology.

Technology to help the

company start its own

growth. During his tenure

three American Express

has been successful in

growing to be the fifth

largest provider of com-

puter services in the

United States.

More recently he has

helped take IBM's profits

from a net loss of \$1.1 billion when he

joined the company in 1988 to sell 70 percent of \$1.4 billion while he

they sold more than he

lost.

Gerstner, who is 51

worked at American

Express for 11 years

before joining Nabisco in

1989. Before Nabisco

Nabisco, he was a senior

at Nabisco in the

1980s, which he joined in

1985 after working at

Master of Business Administration degree

from Harvard University. He will take over

at IBM on April 1, the company said.

William Wilson, an independent analyst

who follows IBM for its 1996

has said that IBM's 1996

earnings, which he said is already in the

middle of a reorganization and an

ambition to be a

company that is not

already being offered." He said

Gerstner will have IBM (NYSE:IBM) 1996

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Sony pushing digital to broadcasters

NEW YORK (NEW YORK PRESS) — Broadcasting's high quality and bandwidth requirements have made it a last frontier of analog production techniques. More broadcast products are expensive, customized devices like specific cameras and white balance units go to digital — Quadek Plus/Frame is now planned into workstation — digital production has remained a last frontier.

Now Sony is bigger factor in producing cameras and video broadcast equipment, is saying that digital is the key to go

At the heart of its 47 new product line within its line coming National Association of Broadcasters' show in Las Vegas are new digital products aimed at broadcast post production.

Leading the list are new Digital Betacam videotape formats. The format is compatible with its existing Betacam cameras which are a big standard for program producers of most commercial and cable's a significant path in creating addresses via tape transfer. The launch is supported by a full line of switches, editors, and other video

and motion.

A big highlight of the new line-up is its first digital editing system. The DGS-300 is based on a PC and combines many of the features of its existing 144,000 effects device with a four digital video editor, audio processor and optional character and palette editors.

Contact: Bert Schmitt, Sony, (212) 500-7400

Remote Access PC communications Heats Up

CORVATON, CALIFORNIA (ENR) — The battle to access access products is heating up with manufacturers lining up behind new standards like Novell NetWare and Microsoft Windows in order to get an edge.



Symantec has announced Netware 3.11 for Windows which not only provides file transfer, but also claims to allow the control of a local computer's home network. It is aimed at workers traveling or working from home. It uses the Windows interface and offers a complete set of general computer functions, including popular financial calculations and file transfer protocols.

Data compression and error-correction facilities are also included, and installation on a local area network offers a software gateway for network sharing with drives for over 50 networks. There's also a built-in script editor. The retail price is \$59.99. Microsoft has announced with Netware Copy for Windows 3.11. Launched in the UK last week, this package offers point-to-point connections to LANs, dial-out connections to LANs, and PC-to-PC connections to modems. Netware 3.11 is also supported, and the new product is compatible with the DOS-based programs in Microsoft's Netware Copy for DOS. In the U.S., the price has been set at the same level as Netware 3.11 and the new package will be provided in Japan of Netware 3.11 after February 1. Users of any brand of remote software can support the new Netware through Net 3.11.

Though Netware's entry, which does not offer remote control but only file transfer, is slightly better than Netware, which is the "single most important step we have taken with our Logix product," in the words of CIO Mark Uppley.

The new package also features basic changes: providing the ability to automate any file transfer over cables, modems, or a network network. File transfer can be scheduled to run automatically, and a "remote" function like that used to automatically copying on communications with users' products is included. The software also features the Universal Communications object (UCO) technology allowing for links with computers that don't have the program. The current Canadian suggested list price is \$69.99/US\$59.99/£17.99.

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connected. Apple's response is the purchase of 10 and 20 computer companies for other reasons. The company is looking for ways to expand its market share in the software market.

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*Source: Intel 486DX2 Performance Study. The study found a 79% performance increase over the 486DX-33MHz based systems. The study was conducted by Intel Corporation, Intel 486DX2/66 processor. ©1993 Intel Corporation. All rights reserved.

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